

REMARKS

Reconsideration is respectfully requested.

Claims 1-20 are present in this application of which claims 15 and 16 have been amended.

The Examiner has rejected claim 15-20 under 35 U.S.C. §112 alleging they are indefinite. The Examiner writes that it is not clear what is meant by "including a contact base having a single protrusion extending from a first surface and an opposite second surface". The Examiner offers 3 possible interpretations of this portion of the claim. The Examiner's 3rd interpretation is correct. This portion of the claim should be interpreted as "a first surface with a single protrusion, and a second surface by itself without a protrusion". The Examiner also alleges possible confusion with the wording "opposite second surface". The surfaces are on opposite sides of the same contact base. The Examiner also suggests changing "defining a touching point the contact base being pivotable about the touching point on two different axes" to "defining a touching point with the contact base being pivotable about the touching point on two different axes".

Regarding claim 16, the Examiner points out there is a lack of antecedent basis for "the carrier". This is a typographical error. Claim 16 has been amended herewith to change "the carrier" to "the carriage". Antecedent for "the carriage" is provided in claim 15.

Applicants submit herewith amendments to claims 15 and 16. It is believed the amendments, which pertain to form only, overcome the Examiner's rejection, put the application in condition for allowance, do not raise issues of new matter, and do not require further search. Reconsideration of the Examiner's rejection and allowance of claims 15-16, and 17-20 which depend from claim 15, is respectfully requested.

The Examiner has rejected claims 1-14 under U.S.C. §102(a) as being anticipated by Pinkernell et al., U.S. Pat No. 4,907,018. Applicants traverse and respectfully disagree with the Examiner's interpretation of the Pinkernell disclosure. Pinkernell discloses in Col 3 lines 56-62:

"The Y reference pad comprises the upper vertical surface 56y of the sculpted surface. The Z reference pad comprises the inner horizontal surface 56z of the sculpted surface. The junction of 56y and 56z comprises a pivot point or rotation point 56r, about which the cartridge 14 rotates during the lock in operation."

Pinkernell uses the term rotation point 56r. However Pinkernell is describing a pivot axis. An axis defined by two planes, i.e. the plane which pass through surfaces 56y and 56z. Try as one skilled in the art might to build a print cartridge that rotates about two planes by following Pinkernell's teaching, it wouldn't work. In fact there is no teaching in any of the documents cited which would motivate one skilled in the art to even try. Only applicants' invention as disclosed and claimed teaches the advantages of having a first electric face and a second electric face that follow each other by being pivotable

about two mutually perpendicular axes. In addition only applicants have invented the structure to make two axis pivotal movement possible.

The Examiner states Pinkernell's second circuit face 16 can pivot about the spring pad 24 during installation. Again applicants respectfully disagree with the Examiner's interpretation of Pinkernell's teaching. Please refer to FIG 8 and Col 2 lines 66 to Col. 3 line 3. "The interconnect strip 16 comprises a strip of flexible dielectric material [with] conducting lines 28 ... The conduction lines terminate in contact bumps 30 which are configured in a particular pattern." Figure 8 shows the pattern of bumps 30 in a rectilinear matrix. Col. 3 lines 4-6 continues "The bumps 26 ... are configured in the same pattern as the contact dimples 30." Clearly no pivoting can occur between two rectilinear matrices of contact points.

The Examiner identifies figure 1 column 1; column 2 lines 1-6 as allegedly demonstrating Pinkernell has anticipated claims 2-5 & 7-9. Pinkernell discloses a print cartridge 14 with electrical contact pads 48 (FIG 9) which become aligned with contact dimples 30 (FIG 8) on the interconnect strip once the cartridge 14 is snapped into the carriage 12. During installation of Pinkernell's print cartridge the contact pads 48 do not follow the contact dimples 30 in any direction because the contact dimples do not move. In fact Pinkernell spends considerable disclosure on how the "contact pads 48 on the cartridge contact 46 get wiped slightly by the convex dimples 30"

(Col 5, lines 15-16), i.e. they move relative to each other. Once Pinkernell's cartridge is installed it is locked in place. Col. 5 lines 24-26 continues "This occurs when the cartridge's outer rear heel lock tabs 84a, c engage the sides 86a,c of the heel lock slot 86 on the carriage 12." Pinkernell's adjacent surfaces do not follow each other after installation either.

Regarding claim 6, Pinkernell does not suggest using anything like applicants' contact base. Applicants' pushing member therefore functions differently from Pinkernell spring pad.

Regarding claims 10 and 12, the Examiner identifies reference 27 in FIG 2 as allegedly demonstrating Pinkernell's anticipation of a contact base having a protrusion formed near the gravity center of the contact base and touching the carriage. Pinkernell's pips 27 have almost nothing in common with applicants' claimed protrusion. In fact, their presence serve to highlight that Pinkernell's interconnect strip of dielectric material 16 is not intended to move. It is not intended to pivot and it is not intended to follow a corresponding surface of electrical contacts. Please refer to Col. 2 lines 61-65 and FIG. 8 "The base support 18 and the chute 20 are aligned in the proper relationship by molded-in features such as pips 27, which engage through corresponding openings in the interconnect strip 16 into opposed openings in the other member."

Regarding claims 11 and 13: As discussed swing movement about a touching point is not possible with Pinkernell's device.

There is no touching point taught or suggested, and, as discussed, Pinkernell's interconnection strip is fixed.

Claim 14 depends from and includes all the limitations of claim 6 which is believed to be allowable. Claim 14 is therefore considered to be allowable.

Claims 15-20 have been amended to overcome the Examiner's formal rejections. The applicants believe the amendments should be entered as discussed above. The claims are also believed to claim patentable subject matter. For at least the reason that, they include the limitation of "being pivotable about the touching point on two different axes". As discussed above, this limitation is neither taught nor suggested by the documents cited. Reconsideration and allowance of the claims is respectfully requested.

Applicants also note the Examiner has added to the prior art made of record two additional documents. They are not relied upon but considered pertinent to applicants' disclosure.

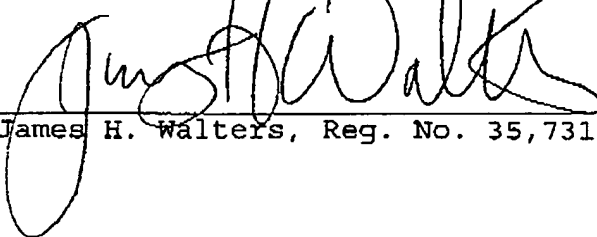
The first is Reed et al (US Pat 5,189,787) which discloses an attachment of a flexible circuit to an in-jet pen. Attachment is accomplished using a staking surface 144 (bottom of) Fig 7 which is pivotal about two separate axes. The function of the surface is to stake a flex circuit 22 onto a surface of a pen body 28 using pressure and heat. As shown in the exploded view in FIG 6 the staking surface 144 is at the end of metal heater block 150 which is allowed to pivot about the X axis and the Y axis by means of gimbal frame. Reed's staking surface clearly

serves a different purpose than applicants' first and second circuit faces.

The second is Buican (US Pat 5,629,725) which discloses a carriage mount for an ink-jet cartridge. Buican's disclosure neither anticipates nor renders obvious applicants' invention as claimed.

In light of the above noted amendments and remarks, this application is believed in condition for allowance and notice thereof is respectfully solicited. The Examiner is asked to contact applicants' attorney at 503-224-0115 if there are any questions.

Respectfully submitted,

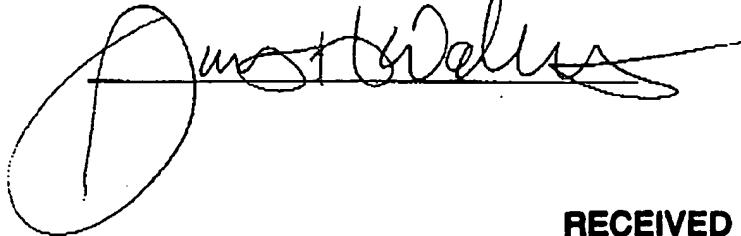


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